

## ABSTRACT OF THE DISCLOSURE

A liquid crystal based polarimetric system, a process for the calibration of this polarimetric system, and a polarimetric measurement process intended for measuring the representative parameters of a sample in which the polarimetric system contains an excitation section emitting a light beam that passes through a polarization state generator (PSG) and onto a sample. After reflection or transmission by the sample, the beam goes through an analysis section with a polarization state detector (PSD). The PSG and PSD each have a first and a second liquid crystal elements  $LC_j$  ( $j=1,2$ ) having, for each  $LC_j$  element of the PSG (respectively for each  $LC_j$  element of the PSD), an extraordinary axis making an angle  $\theta_j$  (resp.  $\theta'_j$ ) with respect to the polarization direction (i), and a retardation  $\delta_j$  (resp.  $\delta'_j$ ) between its ordinary and extraordinary axes, the liquid crystals  $LC_j$  elements being positioned in reverse order in the PSD with respect to the  $LC_j$  elements of the PSG.